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REJECTIONS UNDER SECTION 101

These rejections are respectfully traversed.

In discussing claim 1, the Examiner incorrectly states that the claim does not recite any machine or apparatus for performing the steps. Claim 1 is stated to be a computer method and the operation is stated to be performed in at least one data processing device. The Examiner's assertion that this claim recites only to an abstract idea is therefore unsupported by the claim language. Withdrawal of this rejection is therefore respectfully requested. The other claims depend from claim 1 and therefore incorporate these limitations; moreover some recite more physical structure such as embodiment on a medium (cl. 27).

Nevertheless, new claims 98-100 are added, which recite even more structure.

Declarations under rule 131

The following is a quote from rule 131

b) The showing of facts shall be such, in character and weight, as to establish reduction to practice prior to the effective date of the reference, or conception of the invention prior to the effective date of the reference coupled with due diligence from prior to said date to a subsequent reduction to practice or to the filing of the application.

Accordingly, it is not necessary to show reduction to practice prior to the filing date of the reference, only conception plus diligence in reduction to practice until the filing date of the present application. Applicants accordingly respectfully submit that the Examiner's statements

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that Applicants must show reduction to practice prior to the filing date of the reference are therefore mistaken.

The declarations do establish conception in the summer of 1998.

The inventor, Shyh-Kwei Chen, states that some of his e-mails were wiped out, but that the attachments show the project well underway in December of 1998. His recollection was therefore refreshed that he conceived of the claimed invention in the summer of 1998.

Chen's manager confirms this by his own e-mail records of the progress of the project, including e-mails as early as September of 1998, and his own recollections. The manager's recollection is an independent piece of evidence beyond that of the documents.

Similarly the co-inventor Mingling Lo confirms this date of conception, based on refreshed recollection after viewing the other declarations.

Analogously, diligence in reduction to practice is shown with reference to e-mails and refreshed recollection by all three men, including the manager who is not an inventor and therefore was more objective. This diligence extended throughout the fall of 1998 and the entire year of 1999, when the priority application was filed.

Applicants accordingly respectfully submit that the recollection evidence of the three declarants has been improperly ignored by the Examiner. The documentary evidence shows a project underway, while details of the project are supplemented by the declarants' memories. Testimonial evidence of refreshed recollection is admissible evidence. The declarations therefore do establish conception prior to the filing date of the reference plus diligence until the priority date of the present application.

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Art rejections

The art rejections are respectfully traversed.

Any of the Examiner's rejections and/or points of argument that are not addressed below would appear to be moot in view of the following. Nevertheless, Applicants reserve the right to respond to those rejections and arguments and to advance additional arguments at a later date. No arguments are waived and none of the Examiner's statements are conceded.

In the response to argument, the Examiner has said that the prior arguments are not persuasive, but has not supplemented or explained in response to any of the points made. Applicants respectfully submit that this improper. Applicants have gone through their prior comments and repeat some of them below with some additional or substituted arguments; however, since the Examiner has improperly failed to comment on the arguments, it is difficult to supplement. It is not even clear that the Examiner has understood the arguments.

Claim 97

This claim more clearly defines what an annotated DTD is. In particular annotations are inserted into a DTD relating to a data source format. Please see, for example, Applicants' Fig. 5, which shows an example of a DTD with inserted annotations.

Against this recitation, the Examiner cites Chang's col. 7, line 9 through col. 8, line 42. This section describes Chang's database system, especially the ADT's, UDF's, and XML extender. Perhaps that the Examiner thinks an ADT is a DTD? But this is clearly not the case.

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The ADT is a “relational facility introduced by DB2® allowing the user to define new and distinct data types to a database engine,” per col. 7, ll. 39 et seq. An ADT is used for storing and retrieving XML documents. The UDF’s are facilities for storage, search, and retrieval of XML documents col. 7, ll. 54 et seq. The XML extender performs transactions on indices. However, Applicants see nothing here about DTD’s at all. When Chang wants to refer to DTD’s, Chang clearly knows how to do so, per col. 5, line 50 through col. 6, line 15.

Therefore, Applicants believe that the Examiner is improperly inferring something about DTD’s in this section, when nothing is actually stated about them. Applicants accordingly respectfully submit that the Examiner has failed to make a *prima facie* case against claim 97

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Claim 1

Claim 1 recites establishing a mapping from lists and scalars corresponding to at least one data source into XML elements and attributes. In this claim, and all others depending from it, the lists and scalars are mapped to XML elements and attributes. The XML elements are not themselves the lists and scalars in the data source. To the extent that the Examiner may not understand this recitation, Examiner needs to refer to the meaning of the terminology “mapping ... into” in the specification. The specification makes clear that this terminology relates to retrieving data from a relational database into an XML document. The lists and scalars are part of a source that needs to be made compatible with XML.

It should also be noted that the phraseology “mapping ... into” comes out of mathematical function theory. Mappings are functions that transform data. When the claim says

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“mapping ... into” it means that data is transformed from lists and scalars of a relational database into XML. A wikipedia article about mapping is attached. The recited mapping is not taught or suggested in Chang.

The Examiner’s attention is directed to figure 4 of the application. In this figure it is shown how the invention creates a mapping from scalars and lists of the data source into XML.

The Examiner purports to find a mapping from a data source into XML elements and attributes at col. 19, lines 47-48 of Chang. This section relates to adding data types to XML documents. This section needs to be read in context. The context is expressed in the header for this section, which is “Creating an Index for Structured Documents with Rich Data Types”. These lines state “Adding data types...provides a tool for users to ask range queries, rather than just keyword queries.” Applicants do not see how this relates to *mapping **FROM*** a data source **INTO** XML at all. In Chang, the XML documents are the data source that is being searched.

The Examiner also refers to Figures 1 and 3 of the reference.

Fig. 1 is described in columns 7 and 8. These columns describe a database system 300 for organizing XML documents 500. Any data in the ADT’s or GUI’s, for instance, appears to be derived FROM the XML documents – not mapped INTO the XML documents.

Fig. 3 is described starting at the bottom of column 11. There are descriptions of sending data from the database 300 to the external files 500 that contain the XML; however, as far as Applicants can tell, this data is used for querying the XML database – not for mapping lists and scalars INTO the XML database.

The Examiner also refers to col. 14, line 34 et seq. This section refers again to indexing

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the XML. In other words, the XML data is to be searched. There is no mapping INTO XML.

Applicants accordingly respectfully submit that the Examiner has mischaracterized the reference. Reconsideration is therefore respectfully requested.

Claim 10

This claim recites expressing the mapping in constructs of a mapping language.

Against this recitation, the Examiner cites col. 14, line 34 et seq. Applicants respectfully submit that the Examiner mischaracterizes the reference. This section of the reference relates to indexing existing XML documents, not to a mapping language that maps lists and scalars from a data source into XML elements and attributes.

More information about the general definition of the term “language” is included in the previously submitted document from the online encyclopedia “wikipedia.org.” According to this definition, “a language is a system of symbols, generally known as lexemes and the rules by which they are manipulated.” Applicants do not believe that a mere indexing teaches or suggests a language. In fact, the indexing scheme of the reference appears to chop up XML documents into a table, rather than being a use of constructs of a mapping language.

Applicants accordingly respectfully submit that the Examiner has failed to make a *prima facie* case against this claim.

Claim 90

This claim depends from claim 10 and adds the limitation of inserting constructs into a

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DTD to create an annotated DTD.

Against this limitation the Examiner cites col. 9, lines 40-54. This section of the reference relates to a “constructor.” The Examiner appears to confuse the term “constructor” with the recited “constructs of a mapping language.” A constructor, as disclosed in the reference is not stated to be inserted into a DTD. As far as Applicants can tell, it is a freestanding piece of code. The undersigned is also uncertain, from reading this section of the reference, where the changes specified by the constructor occur. It may be that these changes occur in the DTD, but such changes would be the result of the constructor, not the constructor itself.

Applicants accordingly respectfully submit that the Examiner is mischaracterizing the reference.

Claim 76

This claim has been amended to correct some typographical errors relating to paragraph structure. The scope of the claim has not been changed. This amendment is not in response to the rejection.

This claim recites that the data source includes multiple heterogeneous data sources. These data sources are therefore all to be mapped INTO XML, based on dependency of the claim. The recited DTD corresponds to multiple heterogeneous data sources. The claim further recites that annotations are added to the DTD **SUCH THAT** an XML document generated from an annotated DTD is guaranteed to conform to the DTD.

The Examiner first refers to Fig. 3, elements 500 and 300 as the heterogeneous data

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sources which are to be mapped into XML documents. Element 500 contains XML documents.

How can that be a source that is to be mapped INTO XML documents then? This does not make sense.

The Examiner then cites col. 12, lines 34-60 as adding annotations to a DTD. This section refers to a table of DTDs. The section refers to metadata in DTD's but does not say what that metadata might be. There is no teaching or suggestion that such metadata would be annotations of the sort recited in this claim.

The Examiner then refers to col. 15, lines 50-67. This section starts out “***If*** the XML documents conform to a single DTD.[emphasis added]” Please note the ***if***. The documents may all conform to a DTD, presumably if the user happens to have set things up that way; however, such an occurrence is not taught or suggested to be the result of annotations inserted into a DTD, unlike the claimed invention. In general, the XML documents do not conform to a single DTD, per Chang, col. 14, lines 31-32.

Applicants accordingly respectfully submit that the Examiner has failed to make a *prima facie* case against this claim and has mischaracterized the reference.

Claim 7

This claim recites that the data source is a relational database. The Examiner refers to Chang, column 3, lines 35-60, which mention a relational database. Applicants do not pretend to have invented relational databases. Relational databases are well known in the art and have been

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for decades. That is not the point. The point is mapping *from* a relational database *INTO* XML. This section clearly indicates that the XML IS the relational database, per Chang, col. 3, line 57. The database is not mapped INTO XML, the database organizes the XML.

Claim 16

Against this claim, the Examiner cites figs. 11 & 12 of Chang.

Figures 11 and 12 of the reference, described at col. 16, lines 56 et seq. relate to indexing XML documents based on tagged words in those documents (Fig. 11) and by structure of the documents (Fig. 12.) They fail to teach or suggest constructs inserted into a DTD, much less constructs that include either a value specification or a binding specification per the recitations of claim 16.

Applicants accordingly respectfully submit that the Examiner has failed to make a *prima facie* case against this claim and has mischaracterized the reference.

Claim 19

This claim recites that a construct comprises a parameter. This is a dependent claim, dependent on claim 90/10/1, so reference must be had to the prior claims, which explain that the construct is one that is inserted into a DTD. This limitation does not relate to the moment of creation of an XML document, but rather to a time before the XML document is created, a time when the manner of creating the XML document is being specified in accordance with constructs that are *inserted into a DTD*.

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Against this recitation, the Examiner cites col. 20, line 63 of Chang. This section of Chang discusses inserting data into an XML column. The parameters discussed are parameters of file name and storage type. A record is inserted into a table. Applicants see nothing here at all about inserting parameters into a DTD. Instead, the function appears to be in the XML extender (100, Fig. 2), which appears to be an entire suite of programs, rather than the tables of DTD's. Applicants respectfully submit that the Examiner mischaracterizes what is written here.

The Examiner further cites Chang, col. 22, lines 18-57 as relating to generation of an XML element. Applicants have reviewed this portion of the reference and respectfully submit that the Examiner mischaracterizes it. Applicants find that this portion relates again to retrieving information about of an XML document using "conditional select" rather than generating XML elements and attributes.

The Examiner further cites col. 23, lines 5-51. This section does appear to relate to updating an XML document, but again it appears to use XML extender (100, Fig. 2) rather than constructs of a mapping language inserted into a DTD, per claim 19.

Applicants accordingly respectfully submit that the Examiner has failed to make a *prima facie* case against this claim and misconstrues the reference.

Claim 21

This claim depends from claims 19/90/10/1 and recites producing an XML document based on the mapping, and passing the value to the parameter. Please note again, based on the dependency, that the parameters are part of the constructs of a mapping language that are in turn

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inserted into a DTD and use for mapping INTO an XML document.

The Examiner refers to col. 22, lines 18-57. This section relates to using parameters in SQL – a query language – to search a database of XML documents. In other words, the search retrieves information FROM XML documents. It fails to teach or suggest passing a value to a parameter that is in a construct in a DTD. Applicants accordingly respectfully submit that the Examiner has failed to make a *prima facie* case against these claims and misconstrues the reference.

Claim 25

This claim depends from 22/90/10/1 and recites associating one or more lists of data objects or formulas producing data objects with each DTD construct having a repetition symbol at the end, because of the dependency it is understood that the constructs are inserted into a DTD; that the constructs are constructs of a mapping language; that the mapping is from a data source INTO XML.

Against this claim the Examiner cites Chang col. 5, line 50 et seq. This section relates to a DTD, but this is a standard DTD. Applicants do not see any inserted constructs in the DTD. *A fortiori* this section of the reference cannot teach or suggest that data objects or formulae are associated with such a construct. Applicants accordingly respectfully submit that the Examiner has failed to make a *prima facie* case against this claim and misconstrues the reference.

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Claim 27

This claim depends from 25/22/90/10/1. It recites producing an XML document responsive to the associating operation. A medium embodying the result of the associating operation is claimed. The associating operation of this claim is related to the independent claim 25, where associating operation is further defined as associating lists or formulas with DTD constructs having a repetition symbol.

The Examiner finds a medium at col. 6, line 59. Applicants do not pretend to have invented all computer readable media. Computer readable media have been in existence for decades. The point here is that the medium embodies the result of the associating operation of claim 22. Applicants respectfully submit that the Examiner has cited some random medium here. So far as Applicants can tell, this particular medium has nothing to do with the recitations of claim 27.

The Examiner purports to find the “associating operation” of this claim at col. 8, lines 21-42 of Chang. Applicants have reviewed this section. Applicants find that XML documents are being created and modified; however, the process used to create and modify documents here appears to be totally different from that claimed. An XML extender is used, rather than constructs in a DTD. The XML extender appears to be an entirely separate software module 100. Applicants see no teaching or suggestion of associating anything with a DTD construct that has a repetition symbol. Applicants accordingly respectfully submit that the Examiner has failed to make a *prima facie* case against this claim and misconstrues the reference.

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Claim 28

This claim depends from 22/90/10/1. It recites “the associating includes associating one or more lists of data objects or formulas producing data objects with each DTD construct which is not a #PCDATA, a choice list, or an attribute list, and does not end with a repetition symbol.” Again, the DTD constructs are inserted into a DTD. The associating refers to claim 22, and involves associating values and formulas with the DTD.

Against the recitations of this claim, the Examiner cites Chang’s col. 5, lines 17-48. This section shows an example of an XML document. The section is also followed by a section that shows document type definitions for the XML document. These type definitions include a #PCDATA’s, element lists, and attribute lists.

Applicants do not claim the concept of XML documents or the type definitions per se. These are known from the art. What Applicants claim is associating one or more lists of data objects or formulas producing data objects with DTD constructs, such as shown in the example on page 21 of the present application. The constructs have to be inserted into a DTD. The constructs have to be used as part of a mapping INTO XML. Applicants are not claiming known elements of XML grammar per se.

Applicants accordingly respectfully submit that the portion of Chang cited by the Examiner fails to teach or suggest this claim.

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Claim 34

This claim depends from 22/90/10/1 and recites that associating includes, not necessarily in the following order:

- first associating one or more lists of data objects or formulas producing data objects with a DTD construct;
- second associating at least one of the lists or formulas with at least one variable name; and
- using the variable name as a parameter in at least one other formula.

This claim recites elements of the process by which the XML document is generated.

Examiner purports to find this first associating operation at col 5, l. 50 and col. 9, line eleven of the reference. Applicants respectfully submit that the Examiner misconstrues the reference. Column 5, line 50, et seq. merely shows a conventional DTD. Applicants do not find that it teaches or suggests associating any constructs in the DTD, as that term is defined in the present application and claims.

Column 9, line 11 only refers to the DTDid, an integer identifying a DTD. This integer only identifies the DTD and helps locate that DTD. Applicants fail to see what this has to do with their claim.

The Examiner purports to find the second associating and using steps of this claim at column 24, lines 38-66 of the reference. Applicants respectfully submit that the Examiner misconstrues the reference.

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Applicants have reviewed this section of the reference and understand it to describe searching the XML database, per the section heading at col. 23, line 52. Applicants find no teaching or suggestion of their claimed second associating and using steps – again these steps are recited to be part of mapping INTO XML, due to the dependency of the claim. Searching existing XML is not relevant to this claim at all.

Applicants accordingly respectfully submit that the Examiner has failed to make a *prima facie* case against this claim.

Claim 37

This claim depends from claim 1 and recites associating at least one environment with an XML element to be generated. It is to be noted that “environment” is defined in the specification at page 31-32, i.e. ‘a set of variable/value pairs called the “environment.” ‘ A variable/value pair should look something like this: (x, 10), meaning that the variable x has a value 10.

Against this recitation, the Examiner cites Chang, col. 8, lines 31-32. Applicants have reviewed this part of the reference, which refers to creating an “XML table.” As far as Applicants can tell, this table stores or indexes the XML itself. Applicants are not finding any teaching or suggestion that the table contains variable/value pairs or how variable/value pairs might be used in generating XML elements. Applicants accordingly respectfully submit that the Examiner has therefore failed to make a *prima facie* case against this claim.

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Applicants are repeating this argument from the prior amendment, because they do not find that the Examiner has responded to it. Applicants respectfully submit that this was improper on the part of the Examiner.

Claims 40

This claim recites details of the environment. This claim depends from 37/1 and is therefore related to mapping from a data source into XML.

Against this claim, the Examiner cites col. 15, line 50 through col. 17, line 64. This text appears to describe the structure of an existing XML database per the section heading at col. 15 line 24, which states “Structure Indexes for the XML extender.” Col. 17, line 22 also states “the tag counting system described above also helps the user conduct proximity searches on XML documents.” Applicants are totally unable to discern how this large amount of text may be related to an “environment” as defined by Applicants – or to ***mapping INTO*** XML, as claimed by Applicants. Applicants fail to understand how structuring or searching a database of existing XML documents can teach or suggest such “mapping INTO.” Applicants accordingly respectfully submit that the Examiner has failed to make a *prima facie* case against this claim.

Claim 43

This claim depends from 37/1. The claim recites

- the mapping includes at least one respective specification corresponding to at least one respective XML element;

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- the specification comprises at least one parameter for receiving a value upon generation of an XML document; and
- the method further comprises, upon generation of an XML document, sending the at least one parameter a value according to at least one variable/value pair in the at least one respective environment.

Please note that this claim refers to the mapping INTO XML. The parameter relates to generation of an XML document. The parameter is sent a value based on the environment upon generation of the XML document.

Against this claim, the Examiner cites col. 15, line 25 through col. 16, line 24. This section is entitled “Structure Index for the XML Extender” and describes something called a “structure search” of the XML documents in a database. Again, this appears to relate to structure and search of a database of existing XML documents (such as XML books that are at 80% discount, per col. 15, line 43) rather than generating XML documents from a data source. Applicants see no relationship between this section of the reference and this claim.

Applicants have in the first place not found any teaching or suggestion of a mapping, as defined and discussed with respect to claim 1 above. *A fortiori* Applicants find no teaching or suggestion of what might be in such a mapping, such as a specification of a parameter for receiving a value upon generation of an XML document, per this group of claims. It appears that XML documents are being searched in this part of the reference. Applicants do not understand that XML elements and attributes are being mapped to.

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The claim further references the “environment” as discussed with respect to other claims herein, and which Applicants have previously discussed as not being taught or suggested by the reference.

Applicants accordingly respectfully submit that the Examiner has not made a *prima facie* case against this claim.

Claim 84

This claim depends from claim 1 and recites that the mapping is responsive to a user mapping specification.

Against the recitations of this claim, the Examiner cites Chang at col. 16, lines 1-22. Again, this section of the reference relates to a structure search of the database of XML documents. Applicants find no teaching or suggestion here that a user can specify anything with respect to a **mapping** from lists and scalars **INTO** XML elements and attributes. Applicants accordingly respectfully submit that the Examiner has not made a *prima facie* case against this claim and misconstrues the reference.

Claim 87

This claim depends from claim 1 and recites that there are at least two data sources and the sources are of different types. Against this recitation, the Examiner cites elements 500 and 300 in Fig. 3. However, element 500 is the source and element 300 is the target in this figure.

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They are not both sources. Accordingly, Applicants respectfully submit that the Examiner has not made a *prima facie* case against this claim.

New claims 98-100

These claims set forth various elements of the claims in a more positive fashion and also recite the mapping as already existing. Applicants hope that this more positive recitation will be more understandable than the existing claims and may help eliminate the misunderstandings that the Examiner seems to be harboring regarding what the claims recite.

References on 892 form

The Examiner asks Applicants to review references on the 892 form, without applying them to the claims. If the Examiner believes that the references are pertinent to the claims, the Examiner is respectfully requested to reject the claims over them. Applicants respectfully submit that it is the job of the PTO to examine the application, not Applicants, and that it is not appropriate for the Examiner to send Applicants on a fishing expedition.

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Applicants respectfully submit that they have addressed each issue raised by the Examiner — except for any that were skipped as moot — and that the application is accordingly in condition for allowance. Allowance is therefore respectfully requested.

Please charge any fees other than the issue fee to deposit account 50-0510.

Please credit any overpayments to the same account.

Respectfully submitted,

By ***/Anne E. Barschall/***.

Anne E. Barschall
Reg. No. 31,089
(914) 332-1019
fax 914-332-7719
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